

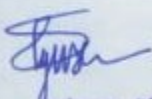
COST BENEFIT ANALYSIS

Project Name: Upgradation of Chutmalpur - Ganeshpur Section of NH-72A and Roorkee-Chutmalpur-Saharanpur-Up/Haryana Border Section of NH-73 Into 4-Lane with Paved Shoulder Configuration.
Total Forest area proposed for diversion=70.2010 ha.

A. PARAMETERS FOR EVALUATION OF LOSS OF FORESTS

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Sr. No.	Parameter	Description												
1	Loss of value of timber, fuel wood & minor forest produces on annual basis, including loss of man hours per annum of people who diverted livelihood and wages from the harvest of their commodities.	Total 7844 trees will be affected due to the proposed project. Approximate timber & fuel value of these trees will be Rs. 1,88,78,344 No Livelihood of people will be affected due to proposed diversion of forest land.												
2	Loss of animal husbandry productivity including loss of fodder.	There is no loss of animal husbandry in the proposed forest land.												
3	Cost of human resettlement	There will be no human resettlement in the protected forest land that is to be diverted for the proposed project.												
4	Loss of public facilities and administration infrastructures (roads, building, schools, dispensaries, electric line, railways etc.) on forest land of which would require forest land if these facilities were diverted due to the project.	No public facilities and administration infrastructures (Roads, Building, School, Dispensaries, Electric Lines, Railway, etc.) will be diverted on forest land due to project.												
5	Environmental Losses to soil erosion, effect on hydrological cycle, wild life habitat, micro climate upsetting of ecological balance	The total area of Protected Forest Land being diverted for the development of proposed Widening and Upgradation of Chutmalpur - Ganeshpur Section of NH-72A km 4.100 to km 16.000 & Roorkee-Chutmalpur-Saharanpur-Up/Haryana Border Section of NH-73 km 23.800 to km 70.000 in the state of Uttar Pradesh is 70.2010ha. As per Forest (Conservation) Act 1980 the environmental loss for 50 years period for the 1 hectare of forest land with density 1.0 is estimated to be = 126.74 Lakh The Environmental loss is as follows <table><tr><th>Name of Forest Division</th><th>Forest Area (In ha.)</th><th>Density</th><th>Environmental Loss</th></tr><tr><td>Shiwalik Forest Division</td><td>39.2350</td><td>0.3</td><td>$0.3 \times 12674000 \times 39.2350$ =149,179,317.00</td></tr><tr><td>Social Forestry Division Saharanp</td><td>30.9660</td><td>0.4</td><td>$0.4 \times 12674000 \times 30.9660$ = 156,985,233.60</td></tr></table>	Name of Forest Division	Forest Area (In ha.)	Density	Environmental Loss	Shiwalik Forest Division	39.2350	0.3	$0.3 \times 12674000 \times 39.2350$ =149,179,317.00	Social Forestry Division Saharanp	30.9660	0.4	$0.4 \times 12674000 \times 30.9660$ = 156,985,233.60
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ur			
Total Environmental Loss			306,164,550.60

The compensatory land provided by the both Forest Division details as follows

Name of Forest Range	Forest Area in (Ha.)	Total Financial outlay for CA (INR)	Total CA cost (INR)
Shiwalik Forest Range	45.360	8242231	8,242,231.00
Social Forestry Range Jalon (Orai Division)	95.405	19310400	19,310,400.00
	140.765		27,552,631.00

The Net Present Value (NPV) details for Both division is as follows

Name of Forest Division	Forest Area (In ha.)	NPV Rate (in Lakhs per Ha)	Total NPV Cost (INR)
Shiwalik Forest Division	39.2350	626000	24561110.000
Social Forestry Division Saharanpur	30.9660	803000	24865698.000
			49,426,808.000

Therefore, current Environment Net Loss in INR=

Particulars	Total Amount
Total Value of Trees	18,878,344.00
Total Financial Outlay for CA	27,552,631.00
Total NPV	49,426,808.00
Environment Loss	306,164,550.60
Total Net Loss	402,022,333.60

Say 40.2022Crores

6	Suffering to ousters	Nil
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B. PARAMETERS FOR EVALUATION OF BENEFIT, NOTWITHSTANDING LOSS OF FORESTS

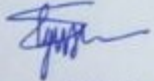
Sr. No	Parameters	Roads, Transmission lines & Railway lines
1.	Increase in productivity attributable to the specific project	Benefit of the project in yr. 2045 Rs. 6508.7161 Crores
2.	Benefits to economy	The EIRR value reaches 18.04 % in the year 2045 The project will have significant socio-economic benefits with enormous saving in fuel sectors, saving in travel time, reduction in accidents and big boost to the rural and urban economy. Saving in vehicle operating cost (VOC) and serving in travel time cost due to congestion free traffic and improve riding quality cost.
3.	No. of population benefited.	Population of the whole Saharanpur District (3,466,382) will be benefitted due to the project directly.
4.	Employment potential	With improvement in economy, more generation of employment opportunities. The construction will require approximately 200 workers / operators for a period of about 24 months. In addition, future induced development of the area would result in industrialization of the region and would generate more opportunities of employment for the people of the region. Approx. 120000-man days of temporary/permanent employment will be generated.
5.	Cost of acquisition of facility on non-forest land wherever feasible	Nil
6.	Loss of (a) agriculture & (b) animal husbandry production due to diversion of forest land.	Nil
7.	Cost of rehabilitating the displaced persons as different from compensatory amounts given for displacement.	Nil As there are no displaced persons involved in forest section.
8.	Cost of supply of free fuel-wood to workers residing in or near forest area during the period of construction.	Nil No fuel wood will be supplied to the workers during the construction period.

Total cost calculation details as follows

Total Project Cost (including Civil Construction cost) (Crores)	2041.947
Environmental Loss Cost (Crores)	40.2022
Total Cost (Crores)	2082.1492

Benefit cost ratio= Total Benefit/Total cost
= 6508.7161 Cr./2082.1492Cr.=3.13:1
Result =3.13>1

Hence Project is found viable.


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